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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,252	01/27/2004	Thomas G. Rukavina	1908A1	9565
<div>7590 Andrew C. Siminerio PPG Industries, Inc. One PPG Place Pittsburgh, PA 15272</div>				
			EXAMINER TRAN, THAO T	
			ART UNIT 1711	PAPER NUMBER
			MAIL DATE 09/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/765,252	<b>Applicant(s)</b> RUKAVINA, THOMAS G.	
	<b>Examiner</b> Thao T. Tran	<b>Art Unit</b> 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/10/2007 has been entered.
2. Claims 1-23 are currently pending in this application. Claim 1 has been amended. Claims 10-23 have been withdrawn as directed to a non-elected invention.
3. In view of the prior Office action, the 112 rejections have been withdrawn due to the Amendment made thereto. However, a new 112 rejection is set forth below. The prior art rejections are maintained below.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant

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art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 introduces the newly added limitation, “an average molar distribution of three monomeric units”, that has no adequate support in the specification as originally presented.

Although the specification, in paragraph 0018, discloses the equivalent ratio of diisocyanate:aliphatic diol:polymeric diol to be about 1:1.1:0.9, there is nowhere in the specification that teaches the polyurethane polyol prepolymer to have the claimed average molar distribution. If Applicants are trying to claim the equivalent ratio of the three monomers, please state so.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 8 are indefinite because claim 1 recites an average molar distribution of three monomeric units, which appears to correspond to a ratio of the three monomers as 1:1:1. And claim 8 is directed to a ratio range of the three monomeric units. Applicants are required to clarify the amount of the monomers in the oligomer.

Note that is rejection is similar to the previous 112, 2<sup>nd</sup> paragraph, rejection.

***Claim Rejections - 35 USC § 103***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-6, 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US Pat. 3,917,570).

Chang discloses a polyurethane polyol produced by reacting a polyhydric material with an organic polyisocyanate (see col. 2, ln. 19-23). The polyhydric material is a polyester polyol such as caprolactone diol (see col. 4, ln. 5-9). The polyhydric material may further include low molecular weight polyols, such as butanediol or trimethylolpropane (see col. 5, ln. 19-30). The polyisocyanate can be 2,2,4-trimethylhexane diisocyanate (see col. 5, ln. 50-61).

Chang further discloses the ratios of the above components may be varied (see col. 6, ln. 51-53). Therefore, it would have been obvious to one of ordinary skill in the art the average molecular weight of the polyurethane polyol would have been adjusted by adjusting the amounts of the diisocyanate and the polyhydric material in order to obtain the desired results.

Although Chang does not teach the other aliphatic diols as recited in claim 4, it would have been obvious to one of ordinary skill in the art that butanediol, pentanediol and hexanediol have been conventionally used in the art as alternative diols. Thus, using one in lieu of other would have been depended upon user's preference.

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10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang as applied to claim 1 above and further in view of Watson (US Pat. 4,264,752).

Chang is as set forth in claim 1 above and incorporated herein.

Chang does not teach the use of the polyhydric material to be polyoxyhexylene carbonate diol.

Watson teaches a polyurethane prepared from an alkylene glycol carbonate or a polyoxyalkylene glycol carbonate formed from hexylene glycol or propylene glycol (see paragraph bridging col. 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art, to have employed polyoxyhexylene carbonate diol, as taught by Watson, in the invention of Chang, for the purpose of enhancing tensile strength of the composition.

### ***Response to Arguments***

11. Applicant's arguments filed on 7/10/2007 have been fully considered but they are not persuasive.

In response to Applicants' argument with respect to using the structural unit of the trimeric polymer to support the claimed "average molar distribution" of the polymer, it is noted that the structural unit is used to represent the equivalent ratio, not "average molar distribution". Applicants are advised to state the ratio as the equivalent ratio.

In response to Applicants' argument that the presently claimed invention differs from the reference in that it claims the polyurethane prepolymer with specific ratios of the short chain diol

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and the polyol with respect to the diisocyanate, it is noted that the specific ratios as mentioned are not recited in the presently claimed invention.

With respect to Applicants' argument that in Chang, the structure of the polyurethane polyol is branched, whereas the claimed polyurethane polyol has linear structure at the terminal ends, it is first noted that the invention of Chang comprises all the same unit monomers, i.e. polyester polyol, low molecular weight polyhydric material, and polyisocyanate (see paragraph 9 above), as presently claimed. Moreover, the claim language does not convey that the polymer has linear terminal ends. The claim language is directed to "comprising", which is an open language.

The same argument applies to the combination of Chang and Watson.

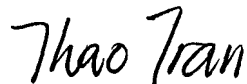
### ***Contact Information***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 9:00 a.m. - 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Thao T. Tran  
Primary Examiner  
Art Unit 1711

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